

**Division of Aquatic Resources  
Department of Land and Natural Resources  
State of Hawaii**

October 24, 2003<sup>1</sup>

To: Peter T. Young, Chairperson

From: William S. Devick, Administrator  
Division of Aquatic Resources

Subject: **Background for Proposed Statewide Lay Net Ban**

The Division of Aquatic Resources (DAR) has been working on improving management of lay nets for some time. In 1997, a new type of gillnet appeared along the Wai'anae coast of O'ahu. This monofilament net was set on the bottom in depths 200 feet or greater via a hydraulically operated drum on the bow of a boat. Concerns about the use of this gillnet prompted the formation of a Gillnet Task Force composed of various fishermen concerned about gillnets with DAR staff in support. Members of the task force came from Kaua'i, O'ahu, Moloka'i, Maui, and Hawai'i. At first, their concerns were with the deep-set gillnets, but they broadened their discussion to include inshore gillnets (lay nets). In 1999, the task force presented a list of recommendations on managing gillnets to the department.

Recently, there has been increased interest in implementing a statewide ban on lay nets, from within and outside the department. At the public meetings last year, some fishermen volunteered their opinion that DLNR should ban lay nets. A ban on lay nets was not presented by DAR at the 2002 public meetings since it was not part of the Gillnet Task Force recommendations and was not explicitly discussed as an alternative at that time. In addition, there are indications that some legislators may introduce bills aimed at implementing a statewide lay net ban. We need to go to the public to obtain their input on a potential statewide lay net ban and to discuss various options for exemptions to the ban.

For the purpose of these discussions, we will refer to stationary gillnets used in inshore waters as lay nets. These are also commonly called set nets or moemoe nets. The lay net is a passive gear because the net is set stationarily in one location and left more or less unattended. The fish are caught as they run into it and become entangled. The nets are commonly made of monofilament nylon which has been manufactured into netting available in 125' long pieces from fishing supply stores and sewn together to make larger nets. A pa'ipa'i net is essentially the same net used for lay net (moemoe) but actively fished. The fishermen set the net, usually in an arc, and then drive fish into the net by splashing the water. Then they pick up the net to retrieve the fish. The net is not left unattended.

The DAR held ten statewide public meetings in September/October 2002 to obtain public input on a set of proposed lay net (stationary gillnet) regulations based on recommendations from the Gillnet Task Force and in-house staff discussions. The public meetings were focused mainly on evaluating the proposals. Two survey forms were also circulated to attendees to solicit more

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<sup>1</sup> Document Note: Revised per Board of Land and Natural Resources approved revisions, 10/24/03.

detailed comments. In addition, a separate survey was mailed to commercial marine fishermen.

DAR aquatic biologists Jo-Anne Kushima and Alton Miyasaka prepared a report reviewing the chronology of the lay net management effort and summarizing the results of the public meetings and surveys. It provides detailed information on the lay net issue and comments expressed at the public meetings. They compiled a set of recommendations for lay net management based on input from the public meetings (hereafter known as the report recommendations). A copy of the report is attached.

The current regulations on lay nets set a maximum soak time of four hours, with a requirement to inspect the net every two hours. The minimum mesh size is 2 3/4" stretched. There are no other restrictions. The report recommendations included limits on lay net length and height, limit to one use in 24 hours, limit on water depth, retains the 2 3/4" minimum mesh size, sets a minimum space between nets, and requires permitting by the department and tagging and marking of nets. The report recommendations specified a 12 hour maximum soak time for recreational lay nets (4 hours for commercial), a 1,200' maximum length for commercial lay nets and a 500' maximum length for recreational lay nets.

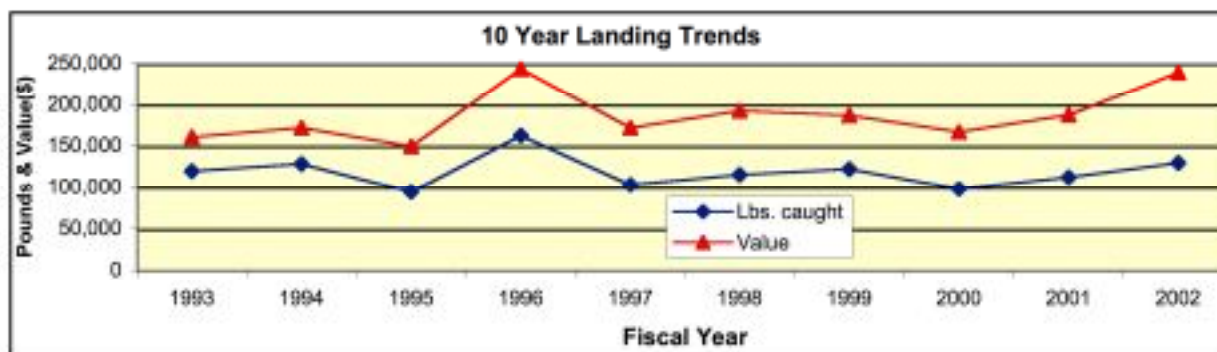
We propose to conduct public meetings expressly to obtain public input on a statewide ban on lay net use. This submittal to the Board of Land and Natural Resources requests that we hold statewide public meetings. Following the public meetings, DAR staff will compile and summarize the public discussions and recommendations and develop a proposed rule for presentation to the board to request public hearings.

### Background Data on the Lay Net Fishery

The following charts and data are presented to provide basic information on the lay net fishery contribution to commercial fisheries. The following data come from the DAR commercial catch reporting system. Recreational/subsistence fishing data are lacking.

It is important to note that the data shown here include landings and values from lay net, gill net, fence net, and cross net, because all these methods are reported under a single method code in the catch report database. It is not possible to separate the landings made by the individual methods without additional studies.

Figure 1. Total Statewide Landings (Pounds) and Value (\$) of Lay nets (and gill nets)



Values are ex-vessel (wholesale) revenues unadjusted for inflation. For FY 2002, 52 lay net (and some gillnet) fishers reported a total catch of 129,511 pounds with an ex-vessel value of \$239,550. In comparison, total statewide commercial landings in FY 2002 were about 21.1 million pounds, worth about \$44.4 million, ex-vessel. There are 3,100 fishermen who have commercial marine licenses.

Figure 2. Total Annual Effort in Number of Licensees Reporting Lay Net Fishing

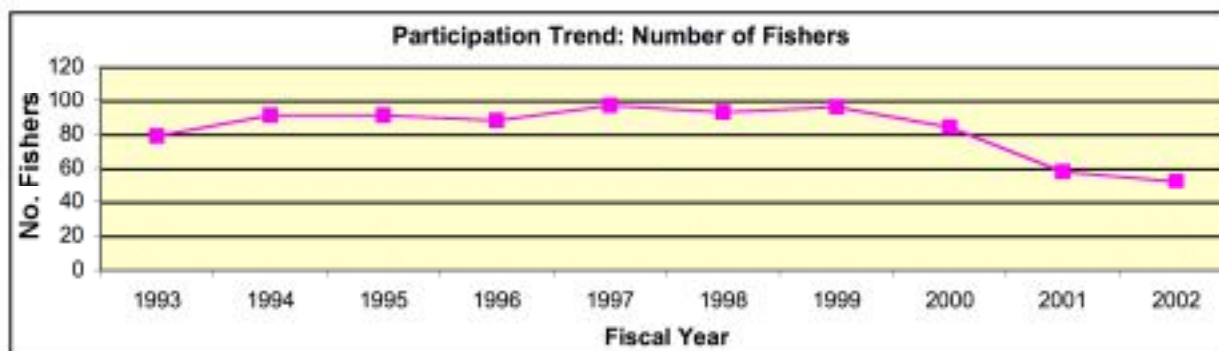


Figure 3. Total Annual Effort in Number of Reported Lay Net Fishing Trips.

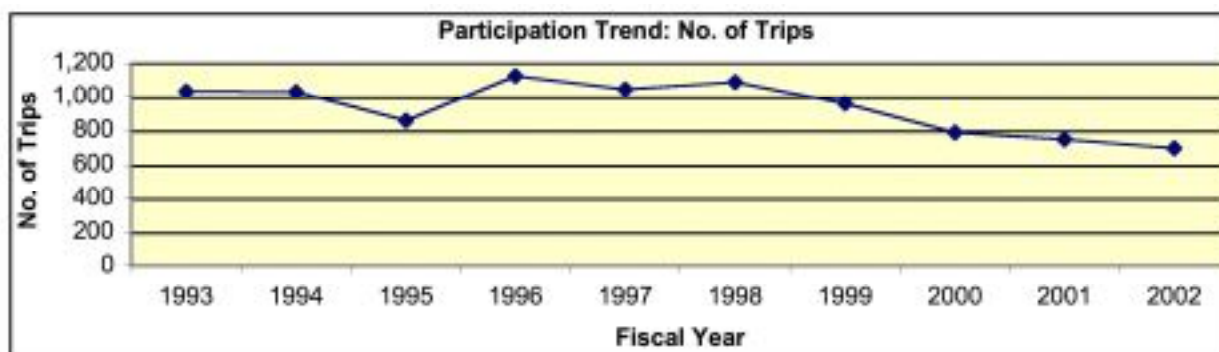
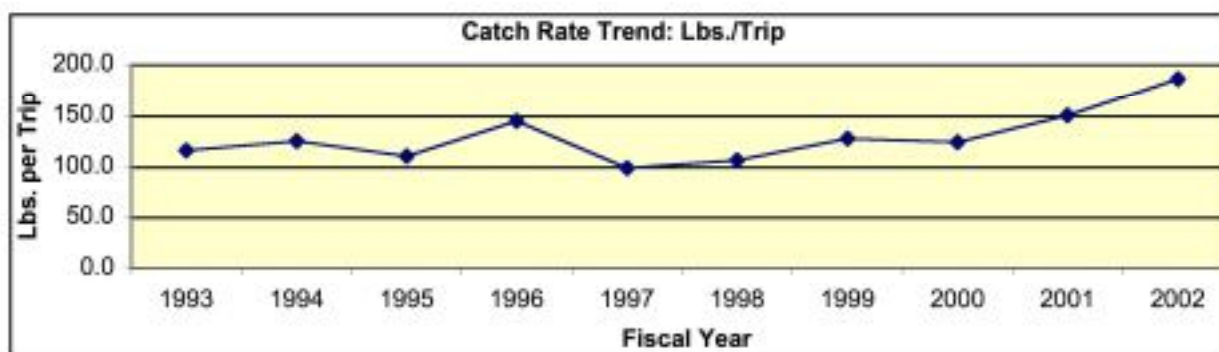


Figure 4. Aggregate Catch Rate in Pounds/Trip.



NOTE: Catch rate is calculated as pounds reported/number of trips. A trip is presumed to be equivalent to one day's report by one fisherman. The catch rate does not take into account the effect of net length, number of sets made in a day, or duration of set (soak time). Because a true

index of fishing effort is not available, it is not appropriate to consider the data in Figure 4 to represent CPUE (catch per unit effort).

Figure 5. Aggregate (1993-2002 sum) Fish Composition of Lay Net Landings

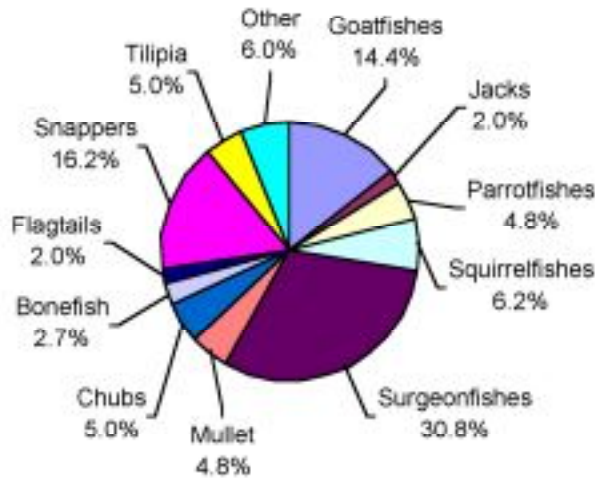


Figure 5 shows the three dominant families harvested (in terms of biomass) by lay net: 1) Surgeonfishes, 2) Snappers, and 3) Goatfishes. Snapper landings consisted of 96% Taape. Goatfishes consisted of 90% Weke (including 3 species). Surgeonfishes consisted of 62% Palani and Manini. These 6 species make up 49% of the total lay net landings. The remaining 51% consists of 29 other families.

Figure 6. The percentage of total landings by lay nets of species that contribute significantly to lay net landings. Aggregated 1993-2002.

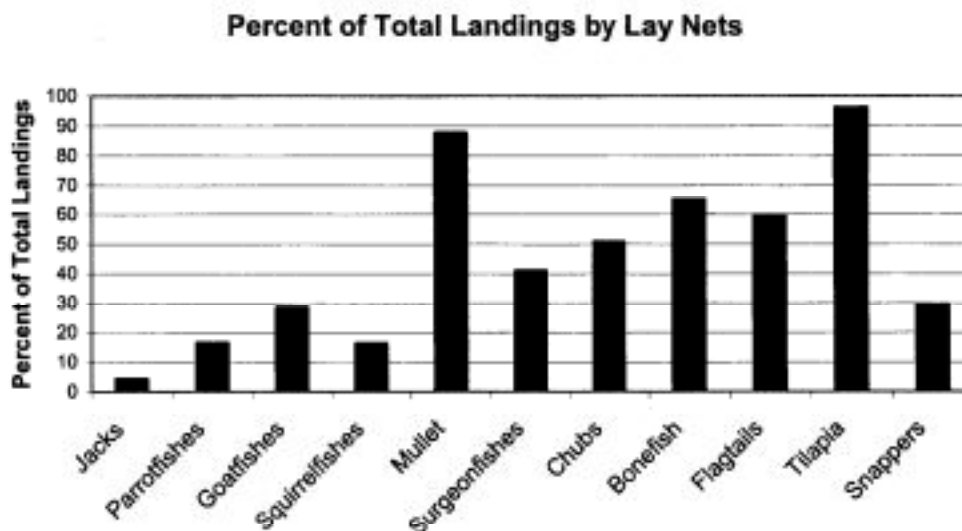


Figure 6 illustrates several key points. The three dominant families (in terms of biomass) in commercial lay net/cross/fence-bag landings were Goatfishes, Snappers, and Surgeonfishes (Figure 5). However, the majority of these families were not harvested with lay nets. Of the total landings per family, Goatfishes were 29%, Snappers were 30%, and Surgeonfishes were 41%. This is explained by the fact that these three families are the most heavily harvested families of the commercial inshore fisheries, not just lay net. It also suggests that lay nets have a smaller impact on these families than other families (as opposed to Mullet, Chubs, Bonefish, and Flagtails).

On the other hand, this figure clearly shows that lay nets are largely responsible for commercial landings of tilapia and mullet, and the majority of bonefish (oio) and flagtail (aholehole).

Figure 7. Lengths of Lay Nets Reported by Commercial Fishermen on New DAR Catch Reports (October 2002 – July 2003).

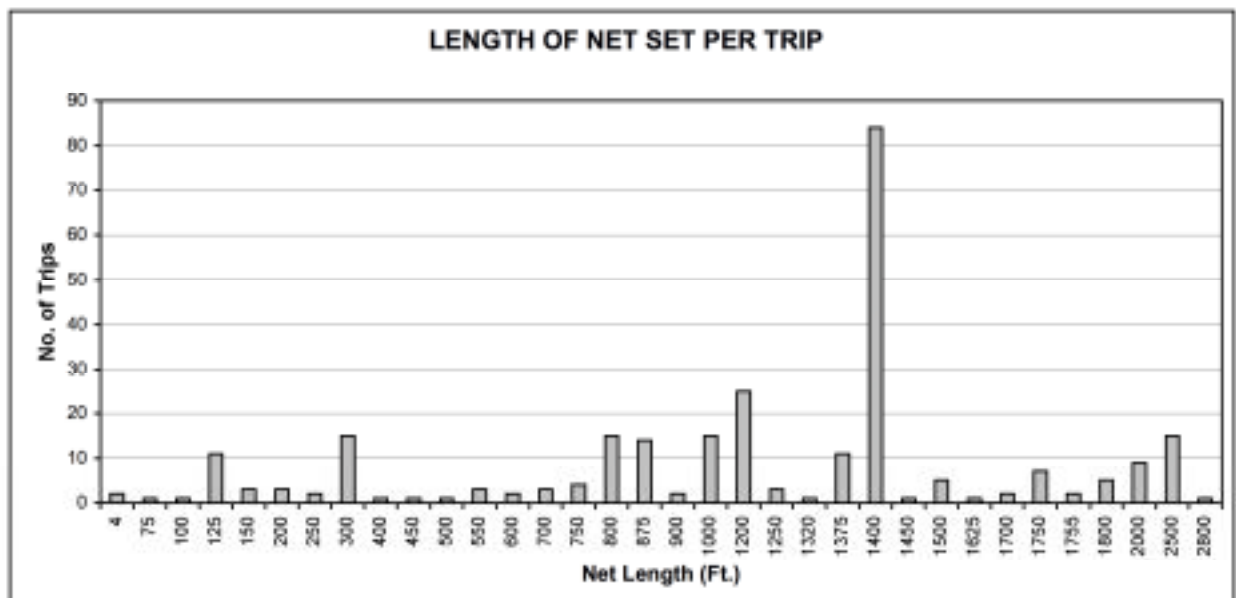


Figure 7 shows that the most frequently used (by number of reports) commercial lay net length is 1,400 feet. However, only four fishermen reported using this length net, and one of the fishermen reported using it 78 times, accounting for the high frequency. In any case, this chart indicates that commercial fishermen reported using lay nets as long as 2,800 feet. Limiting all lay nets to 250 feet may adversely impact commercial lay net fishermen.

## Acknowledgements

Reginald Kokubun, DAR research statistician, provided the summaries used for the analyses presented in this document. Aquatic Biologists Andrew Burnell and Tony Montgomery contributed some graphs and text. Other material was drawn from the Kushima and Miyasaka 2003 lay net report.